

# *Vista System Evaluation Assessment in Action Report*

## **Executive Summary**

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### ***Background***

Starting in 1991, Public Health – Seattle and King County (PHSKC) began developing Vista to provide their epidemiology and program staff with a user-friendly tool to access timely assessment information on a wide range of public health issues. In its present-day form, Vista is both a web-based, menu-driven user interface and a collection of public health data sets. The program is a rapid, reliable, and interactive data analysis tool, designed to maximize user flexibility. Through a partnership with the Washington State Department of Health (DOH), Vista was disseminated to local health jurisdictions (LHJs) across Washington in 1996 and remains to date the primary software tool used by LHJ staff for community health assessment.

In 2002, the U.S. Centers for Disease Control and Prevention (CDC) awarded funding to DOH to improve community health assessment practice, enhance Vista, and share the Vista tool and partnership model with Oregon State. The first grant year was devoted to evaluating existing systems and developing a four-year work plan for achieving grant goals. The evaluations and work plan development were implemented through a new partnership – called Assessment in Action (AIA) – with Washington’s LHJs and the Oregon Department of Human Services, Health Services (DHS). A Steering Committee composed of LHJ and DOH staff directs grant implementation, with guidance and advice provided by a broader Advisory Committee. The Vista Advisory Group also provides input and oversight on the Vista-related aspects of the AIA grant.

As a first step toward enhancing Vista and disseminating the tool to Oregon State, the AIA Steering Committee conducted a comprehensive evaluation of the Vista system that addressed four questions:

- How healthy is the Vista Partnership?
- How can Vista better meet users’ needs?
- How well does the software function?
- What does it take to adopt Vista outside Washington State?

The methods, findings, and recommendations from these four components of the Vista system evaluation are summarized below.

## ***The Vista Partnership***

In 1996, the Washington State Department of Health (DOH) and 33 Washington Local Health Jurisdictions (LHJs), entered into a partnership with Public Health – Seattle and King County (PHSKC) to disseminate Vista statewide and to provide training and assistance to LHJs in its use. In 2001, Spokane Regional Health District (SRHD) joined the partnership to provide training support to eastern Washington. The goals of the Vista Partnership are to:

- Enhance access to population-based data for local and state assessment staff to use in planning and priority-setting
- Ensure access to standardized public health assessment data, methods and measures across the state.
- Provide maximum flexibility to the user to define time frames, geographic areas and assessment topics so that the information is relevant to local communities.

Vista is a user-governed partnership: LHJs across Washington participate in determining the directions of Vista development and other partnership activities (e.g., training) through the Vista Advisory Group. The Advisory Group meets 2-3 times per year and is comprised of local health Vista users, DOH data suppliers (and users), PHSKC developers, and others. Much of the Advisory Group's work happens between meetings in ad hoc subcommittees, where users and developers collaboratively work through technical and policy issues. Day-to-day oversight occurs in the Vista Planning Group, and is based on a consensus model. Vista has historically been funded through the Public Health Improvement Partnership (PHIP).

## **Methodology**

As part of a comprehensive evaluation of Vista, the AIA Steering Committee planned an evaluation of the Vista partnership. The goals were to assess the health of the partnership, identify areas of concern, and develop recommendations for strengthening the working relationships that make Vista possible.

Thirteen LHJ and DOH staff involved in the Vista partnership were selected by the AIA Steering Committee to participate in individual qualitative interviews. An external contractor, Smith-McCann, conducted the interviews using an open-ended discussion guide created by the Steering Committee. Audio-recordings of the interviews were transcribed and analyzed for emergent themes by a separate contractor, Clegg and Associates. The findings were framed according to a model for successful partnership.

## **Findings**

Although the findings point to a healthy collaborative process generally, respondents identified significant challenges to the partnership going forward. These challenges relate primarily to the delineation of roles and expectations, defining the vision for the future direction of Vista and the partnership, and communication processes. Respondents described the relationships and collaborative work done “at the table” as being generally

strong. Conflicts within the larger systems in which the partnership operates, however, drain energy from the partnership and ultimately pose a threat to its sustainability.

- Partnership members have bought into the user-driven process and partnership structure
- There is general agreement about what the partnership's goals are, the degree to which they are being met, and the value of the partnership
- Goals are generally being met, although there is never enough time, staff, or money to do as much as the partners would like to do
- There is a lack of trust within DOH and between DOH and the LHJs regarding members' interests and priorities
- There is a lack of clarity about agency roles, expectations, and conflict resolution processes
- There is a lack of shared vision for the future directions for Vista

## **Recommendations**

### ***Resolve the systemic issues that affect the Partnership***

- Brief DOH and PHSKC upper management on the specific issues impacting the Partnership and enlist their assistance in resolving problems
- Address internal DOH differences regarding the purpose and future of Vista
- Define a clear conflict resolution process for the Partnership
- Institute written agreements that define roles and expectations for Partnership members

### ***Improve Vista-related communication within DOH and between DOH and LHJs***

- Determine ways to improve the communication mechanisms currently in place and ensure the communication reaches upper management at DOH
- Increase the transparency of DOH decision-making related to Vista and ensure that Partnership members have a clear understanding of DOH priorities

## ***Vista Users' Needs***

The current user community for Vista includes LHJ and DOH staff working in assessment, their designated contractors and community partners, and public health students in Washington. As part of the Vista evaluation, the AIA Steering Committee sought to identify the needs Vista is fulfilling for users and the gaps where needs are not being met. Understanding user needs is essential for guiding the ongoing development and enhancements to Vista. Historically, user input and feedback has been gathered through a biennial survey, Vista Advisory Group meetings, and other mechanisms (e.g., a listserv).

## **Methodology**

To assess the extent to which Vista users' needs are being met, the AIA Steering Committee used the results of the biennial survey and conducted focus groups. In March 2003, a web-based survey was conducted that queried Vista users about their use of Vista, assessment topics, output, support, and training. Every individual with a current login for Vista was asked to complete the survey; 64% of people with a current login responded. Results were collected and summarized by the Statewide Vista Coordinator.

Additional, in-depth information on user needs was collected through focus groups, carried out in May 2003. Three focus groups, with 6-10 participants in each, were conducted in Everett, Olympia, and Moses Lake. The focus groups were conducted by Smith-McCann, using a discussion guide developed by the AIA Steering Committee. Discussion topics included the Vista interface, data, output, training, ease of use, and unmet needs. Smith-McCann provided a written analysis of the focus group findings. AIA Steering Committee members then combined these findings with the survey results to summarize major themes and recommendations for improving Vista's usefulness to its users.

## **Findings and Recommendations**

Users stated Vista is fast, reliable, efficient, and easy to use for those with some data analysis background, and performs a critical role for community health assessment. Four major themes for improving Vista emerged from both the survey and the focus groups:

### ***Make the data in Vista current and complete***

- Update sub-county population estimates and provide sub-county numerator data
- Develop functionality to analyze sub-county data and custom data sets
- Update reportable conditions to comply with standard DOH definitions
- Add 2000 U.S. Census Data
- Add the functionality to select any ICD code to form customized groupings

### ***Enhance Vista output through the creation of new output options***

- Produce more automated options for output, e.g. template for report card, maps, tables, graphs
- List consistent data sources on output
- Have ICD codes displayed on output
- Include links or explanations about all output fields

### ***Improve Vista training effectiveness and add training options in related skill areas***

- Consult with DOH Office of Health Promotion and other learning specialists to make training more effective
- Explore partnerships with Focus Area B of Emergency Preparedness and Response Program to conduct basic epidemiology training
- Plan regional trainings that enable participants to produce their own community health status reports

### ***Increase the user-friendliness of the Vista interface***

- Make help buttons consistent
- Add hover messages for easy help and click for a more detailed explanation
- Add coaching or prompts to explain steps needed to do analysis
- When software is updated explain what was updated and why

## ***Vista Software***

The purpose of this part of the Vista system evaluation was to identify the software's strengths and weaknesses, and to develop recommendations for future enhancement. The AIA Steering Committee and consultants (Smith-McCann) worked collaboratively to establish evaluation criteria. Vista stakeholders (including the Vista Advisory Group, DOH Division of Information Resource Management, Multnomah County Health Department (MultCo), and DHS) were also asked for input on the evaluation criteria. The evaluation was conducted by information technology consultants at Smith-McCann. Results were shared with the stakeholders for comment.

## **Methodology**

The Vista application was put through a comprehensive review to determine whether it exhibits qualities important to organization mission-critical software (e.g., functionality, ease of use, reliability, performance, and extensibility). The consultants interviewed key staff (e.g., DOH technical support staff, the Statewide Vista Coordinator, PHSKC project manager); reviewed code, databases, and documentation; and attended a user training session to observe system performance.

## **Findings**

### ***Vista should be supported and improved***

- Vista provides vital assessment analyses that are difficult to produce using other products and is valuable to the public health assessment community in Washington

### ***Vista has many strengths***

- The application is stable and reliable
- Response time is very good for an application performing complex calculations
- Vista has few, if any, issues with availability (uptime is 24/7)
- The code is in reasonable condition for an application of its age
- Updates are automatically downloaded, keeping the application current for users
- The user interface design is adequate for the tasks it is used for now

### ***Weaknesses are primarily in the area of maintainability***

- The structural coherence of the interface component is below an acceptable level
- System documentation is minimal and needs to be completed
- Important, generally accepted industry coding conventions are not being used

### ***Other weaknesses could affect wider distribution***

- Microsoft Access is not sufficiently robust for future expansion of Vista
- Some agencies restrict permission to install applications, making updates difficult
- The user interface does not follow current conventions for screen design
- User documentation is incomplete and needs to be updated
- The application-level help and error messaging is inadequate

## **Recommendations**

### ***Functionality***

- Complete the conversion of Vista from the desktop to the web version
- Over time, consider and further evaluate a phased move to the Microsoft .NET environment (supports both “thin” and “fat” client architectures)

### ***Ease of Use***

- Evaluate the Vista interface for ways to simplify it and make it more user-friendly (e.g., through the addition of “wizards” to guide users through the construction of a query)
- Update the Vista user manual to reflect changes in the web-based version

### ***Reliability***

- Examine the Vista Calculator component to assure full and prompt release of resources
- Perform a security audit of the application and research feasibility of using SSL features

### ***Performance***

- Implement regular monitoring of system resources and database usage to assess performance of concurrent usage
- Upgrade the existing server to prepare for wider usage

### ***Extensibility***

- Clean up and improve the system's code structure
- Install a test environment and implement testing procedures for software changes

### ***Data Components***

- Plan for the eventual conversion of Access databases to SQL Server or similar database management software
- Implement testing procedures for each dataset in Vista



## ***Disseminating Vista Outside Washington State***

In November 2001, Multnomah County Health Department (MultCo) in Oregon State contracted with Public Health Seattle and King County (PHSKC) in Washington State to receive Vista. In October 2002, the Washington State Department of Health (DOH) and Oregon Department of Human Services, Health Services (DHS) formed a partnership through the Assessment in Action (AIA) federally funded CDC grant to evaluate the dissemination of Vista in MultCo and transfer Vista to other county health departments in Oregon.

As a first step toward sharing Vista with Oregon State, the AIA Steering Committee evaluated the dissemination of Vista to Multnomah County, Oregon. Factors were identified that contribute to and hinder the successful dissemination of Vista. Knowing these factors will assist in the dissemination of Vista statewide in Oregon and potentially other states and counties.

## **Methodology**

Key informant interviews were conducted in the Health Research and Assessment unit of the Office of Planning and Development at MultCo and at DHS (e.g., Research and Evaluation Supervisor and Manager of the Health Research and Assessment unit, MultCo. database administrator and the Information Services Coordinator/Public Health Informatics Section Manager at DHS). Two staff at DOH were also consulted: the IT Manager for the Center for Health Statistics (CHS) and the Chief Information Technology Officer for DOH.

The AIA Steering Committee developed the evaluation plan and interview guide. All interviews (except one phone interview) were conducted in-person by the Statewide Vista Coordinator. Questions were asked related to general vision and process to date for disseminating Vista, investment, infrastructure successes and challenges, data and documentation needs, and training (Appendix A).

## **Findings**

The following are a summary of factors important to the successful dissemination of Vista:

- Educating and communicating in order to build a constituency internally and externally
- Partnering between local health departments and the state to ensure local data needs are met
- Establishing relationships with data providers early on
- Establishing needed data sharing agreements and commitments to providing data in a consistent format over time
- A dedicated staff person with programming and data analysis experience to work on the technical aspects of adopting Vista (e.g. work with data providers around installing and verifying the data)

- Establishing a central person to coordinate policy, training and politics (non-technical aspects of adopting Vista)
- Establishing relationships with local and state IT staff
- Establishing a dedicated secure server for Vista
- Mentoring from DOH and PHSKC to guide dissemination
- Documentation of the dissemination process
- Ensuring consistent population estimates over time
- Creating a formal data verification process
- Defining the users
- Identifying resources to strengthen the infrastructure for making informed decisions at the local level
- Leadership that values community health assessment
- Training around Vista functionality, assessment, epidemiology, and the limitations of the data

## **Recommendations**

### ***Washington***

- Create online Vista training
- Add subcounty data and functionality to Vista
- Have data providers update and validate annual data sets
- Consider partnering with DHS and MultCo around the creation of sub-county population estimates
- Encourage flexible IT infrastructures that meet the needs of people around technology (technology isn't the driving force – peoples needs are)
- Create an automated update for the software engine (dll) so that a complete shutdown and restart of the web server is not required
- Obtain professional design input on the Vista front end to increase user-friendliness
- Continue mentoring and consulting with DHS and MultCo
- Continue to provide updated documentation and software upgrades to DHS and MultCo

### ***Oregon***

- Consider partnering with other states and counties around population estimates and creating a reliable process for updating the population estimates statewide annually
- Implement access to birth and death data statewide using Vista
- Create a dedicated staff position at DHS to prepare datasets for community health assessment and work on the technical aspects of adopting Vista statewide
- Create a dedicated staff position at DHS to work on the policy aspects of adopting Vista statewide and improving community health assessment practice
- Formalize a clear and consistent process and commitment – politically and technologically - for updating the Vista databases annually and verifying the data

- Create flexible IT infrastructures that meet the needs of people around technology (technology isn't the driving force – peoples needs are)
- Consider housing Vista on a dedicated secure server (without other applications housed on it)
- Consider collecting information on network and Internet connections statewide (e.g. whether they have a T-1 line), and work collaboratively to improve these connections
- Identify the Vista Users for Oregon
- MultCo provide documentation to DHS on process to date